

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in this application:

LISTING OF CLAIMS:

Claims 1 to 17. (Canceled).

18. (Currently Amended) A method for operating a position-measuring device connected to sequential electronics via a communication unit, the position-measuring device including a signal-generating unit configured to generate positional data, comprising:

(a) transmitting data between the signal-generating unit and the communication unit via an internal interface unit;

(b) transmitting identifying, separating and redirecting measurement-data request instructions in an incoming data stream, transmitted from the sequential electronics to the position-measuring device, without further time delay, to the signal-generating unit to immediately generate measurement data, bypassing the internal interfacing unit; and

(c) transmitting the positional data, generated in accordance with the measurement-data request instructions, from the signal-generating unit to the communication unit via the internal interface unit.

19. (Previously Presented) The method according to claim 18, wherein the measurement-data request instructions are transmitted in the transmitting step (b) to the signal-generating unit via a separate data channel.

20. (Previously Presented) The method according to claim 19, wherein the measurement-data request instructions are transmitted in the transmitting step (b) to the signal-generating unit via a separate connecting line.

21. (Previously Presented) The method according to claim 18, further comprising identifying measurement-data request instructions by the communication unit in a data stream transmitted from the sequential electronics.

22. (Previously Presented) The method according to claim 21, further comprising separating measurement-data request instructions identified in the identifying step from the data stream sent by the communication unit to the internal interface unit.

23. (Previously Presented) The method according to claim 22, further comprising conditioning the measurement-data request instructions separated in the separating step so that a transmission to the signal-generating unit occurs substantially free of delay.

24. (Previously Presented) The method according to claim 18, further comprising requesting, in addition to the positional data, further measurement data derived from the positional data from the position-measuring device via the measurement-data request instructions.

25. (Currently Amended) A position-measuring device, comprising:
a signal-generation unit configured to generate measurement data;
a communication unit, the position-measuring device connected to sequential electronics via the communication unit;
an internal interface unit configured to transmit data between the signal-generation unit and the communication unit; and
a redirection device configured to transmit identify, separate and redirect to the signal-generation unit, without further time delay, measurement-data request instructions in an incoming data stream transmitted from the sequential electronics to the position-measuring device to immediately generate measurement data by bypass of the internal interface unit.

26. (Previously Presented) The position-measuring device according to claim 25, wherein the redirection device includes a separate data channel between the communication unit and the signal-generation unit.

27. (Previously Presented) The position-measuring device according to claim 26, wherein the data channel is arranged as a separate connecting line.

28. (Previously Presented) The position-measuring device according to claim 25, wherein the redirection device includes a unit configured to identify measurement-data request instructions in a data stream transmitted from the sequential electronics and to separate identified measurement-data request instructions from the data stream.

29. (Previously Presented) The position-measuring device according to claim 25, wherein the communication unit is configured for bidirectional, serial communication between the position-measuring device and the sequential electronics.

30. (Previously Presented) The position-measuring device according to claim 25, further comprising a further signal-processing device between the signal-generation unit and the internal interface unit configured to process generated positional data.

31. (Previously Presented) The position-measuring device according to claim 25, further comprising:

an addressing channel configured for data transmission from the internal interface unit to the signal-generation unit; and

a data-transmission channel configured for data transmission from the signal-generation unit to the internal interface unit.

32. (Previously Presented) The position-measuring device according to claim 31, wherein the addressing channel includes an address clockline and n address lines, the addressing channel configured to transmit data synchronously with respect to a clock signal on the address clockline in n-bit wide serial data packets.

33. (Previously Presented) The position-measuring device according to claim 31, wherein the data-transmission channel includes a data clockline and m data lines, the data-transmission channel configured to transmit data synchronously with respect to a clock signal on the data clockline in m-bit wide serial data packets.

34. (Previously Presented) A position-measuring device, comprising:

a signal-generation unit configured to generate measurement data;

a communication unit, the position-measuring device connected to sequential electronics via the communication unit;

an internal interface unit configured to transmit data between the signal-generation unit and the communication unit;

a redirection device configured to transmit to the signal-generation unit measurement-data request instructions transmitted from the sequential electronics to the position-measuring device to immediately generate measurement data by bypass of the internal interface unit;

an addressing channel configured for data transmission from the internal interface unit to the signal-generation unit; and

a data-transmission channel configured for data transmission from the signal-generation unit to the internal interface unit;

wherein the data-transmission channel includes a data clockline and m data lines, the data-transmission channel configured to transmit data synchronously with respect to a clock signal on the data clockline in m-bit wide serial data packets, and

wherein the clock signal on the data clockline includes a clock signal on an address clockline of the addressing channel delayed by a signal propagation time in the signal-generation unit.

35. (Currently Amended) A position-measuring device, comprising:

signal-generating means for generating measurement data;

communicating means, the position-measuring device connected to sequential electronics means via the communicating means;

internal interface means for transmitting data between the signal-generating means and the communicating means; and

redirection means for transmitting identifying, separating and redirecting to the signal-generating means, without further time delay, measurement-data request instructions in an incoming data stream transmitted from the sequential electronics means to the position-measuring device to immediately generate measurement data by bypass of the internal interface means.